are unrealistic and inappropriate assumptions, in my opinion.

First of all, the SHVA requirement that a Grade B signal be receivable with a conventional rooftop antenna requires that the signal be present at the height -- say 5' above the rooftop - where such an antenna would be located. But in many areas of the country, where one-story homes prevail, a conventional rooftop antenna typically would be located at about 20', not 30'. Thus, Mr. Cohen's maps consistently overestimate the areas within which Grade B signals can be expected to be received.

Second, Mr. Cohen's maps show the area within which 50% of locations can be expected to receive a Grade B or greater signal. But by definition, at such locations 50% of households *cannot* receive Grade B signals. Considering the fact that PrimeTime 24 does not reach more than about 3% of United States television households, that is an inappropriate criterion to use. It would be more appropriate to calculate maps showing areas where 97% of locations can receive Grade B or stronger signals. Thus, for this reason too, Mr. Cohen's maps consistently overestimate coverage maps for purposes of SHVA.

Finally, as discussed in my original Report, Mr. Cohen's maps ignore the effects of morphology (that is,

vegetation and buildings) upon signal propagation. Mr. Cohen's maps therefore are deficient in not taking this factor into account.

As also discussed in my original Report, I have developed a computational algorithm that improves upon the original Longley-Rice methodology used by Mr. Cohen.

In order to demonstrate the effect of these factors in the real world, I have prepared two Longley-Rice maps. One map was prepared under Mr. Cohen's assumptions. The other was prepared using the improved morphology algorithm, a 97% locational probability and a more realistic assumption of a 20' receiving antenna height instead of Mr. Cohen's use of a 30' height.

Attached hereto as Exhibit A is a Longley-Rice map of Television Station WTTG, Channel 5, Washington, D.C., calculated using Mr. Cohen's parameters, and showing the 47 dBu (Grade B) signal contour assuming a 50% locational probability, a 30' antenna height, and no morphological corrections. This corresponds to the map Mr. Cohen would generate for this station. Attached as Exhibit B is a map calculated for the same station with only three adjustments made; a 97% locational probability is used, a 20' antenna height is assumed, and a morphology correction is added. The 97% locational probability calculation is carried out

as described in my original report, using a 2.2-sigma adjustment to the median 47 dBu field strength. To be conservative, I assumed that 1 (one) sigma was equal to 8.3 dB; as discussed in my original Report, this is the sigma derived from Ms. Longley's published formula.

The striking difference between the maps reveals why it is misleading in the extreme to utilize Mr. Cohen's maps to predict where Grade B signal strength can be received for purposes of SHVA compliance. The same dramatic difference would be observed for any television station for which Mr. Cohen prepared maps. Mr. Cohen's maps do not demonstrate that the vast majority of PrimeTime 24 subscribers are ineligible.

Richard L. Biby, PE
May 28, 1998

EXHIBIT A

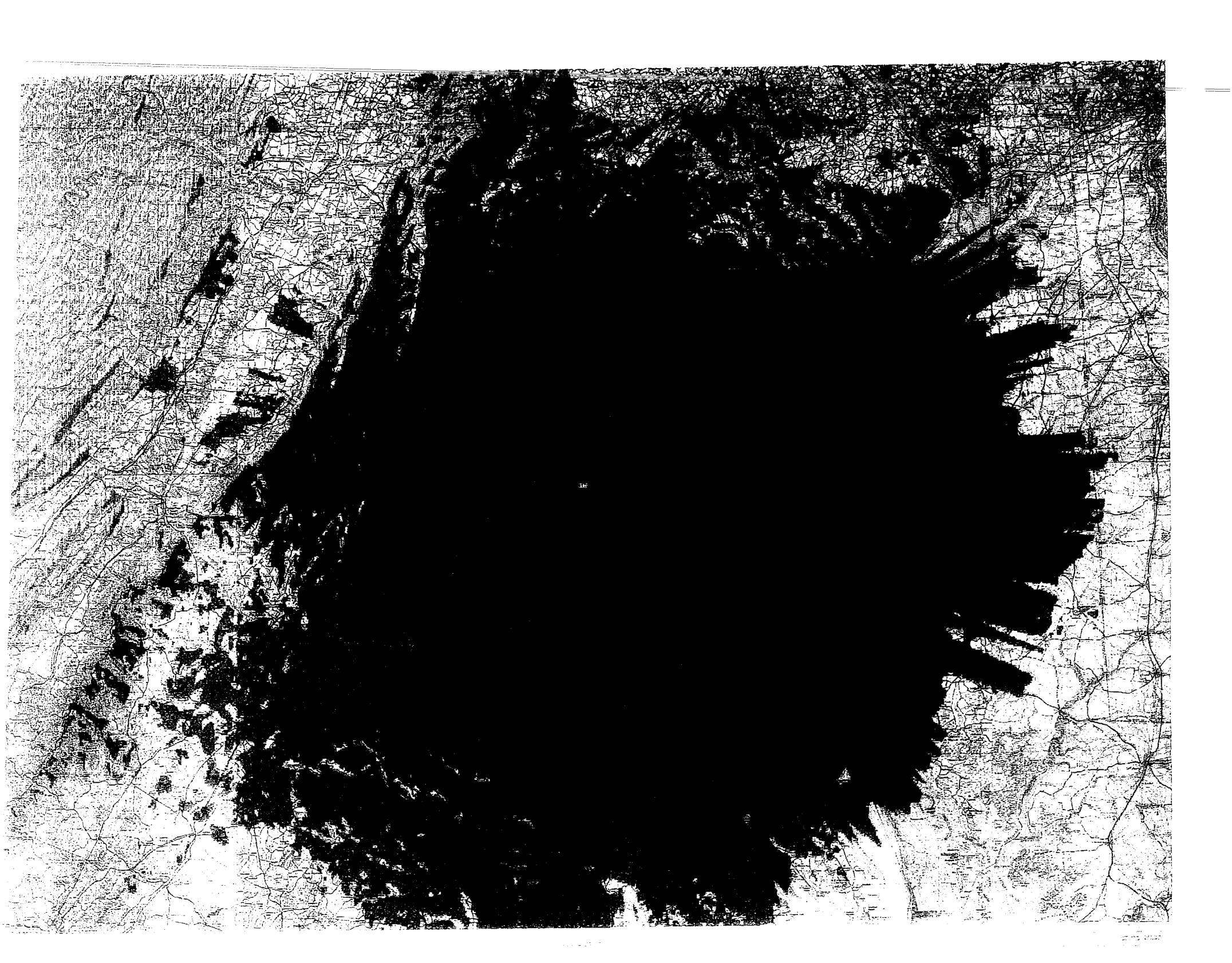

EXHIBIT B

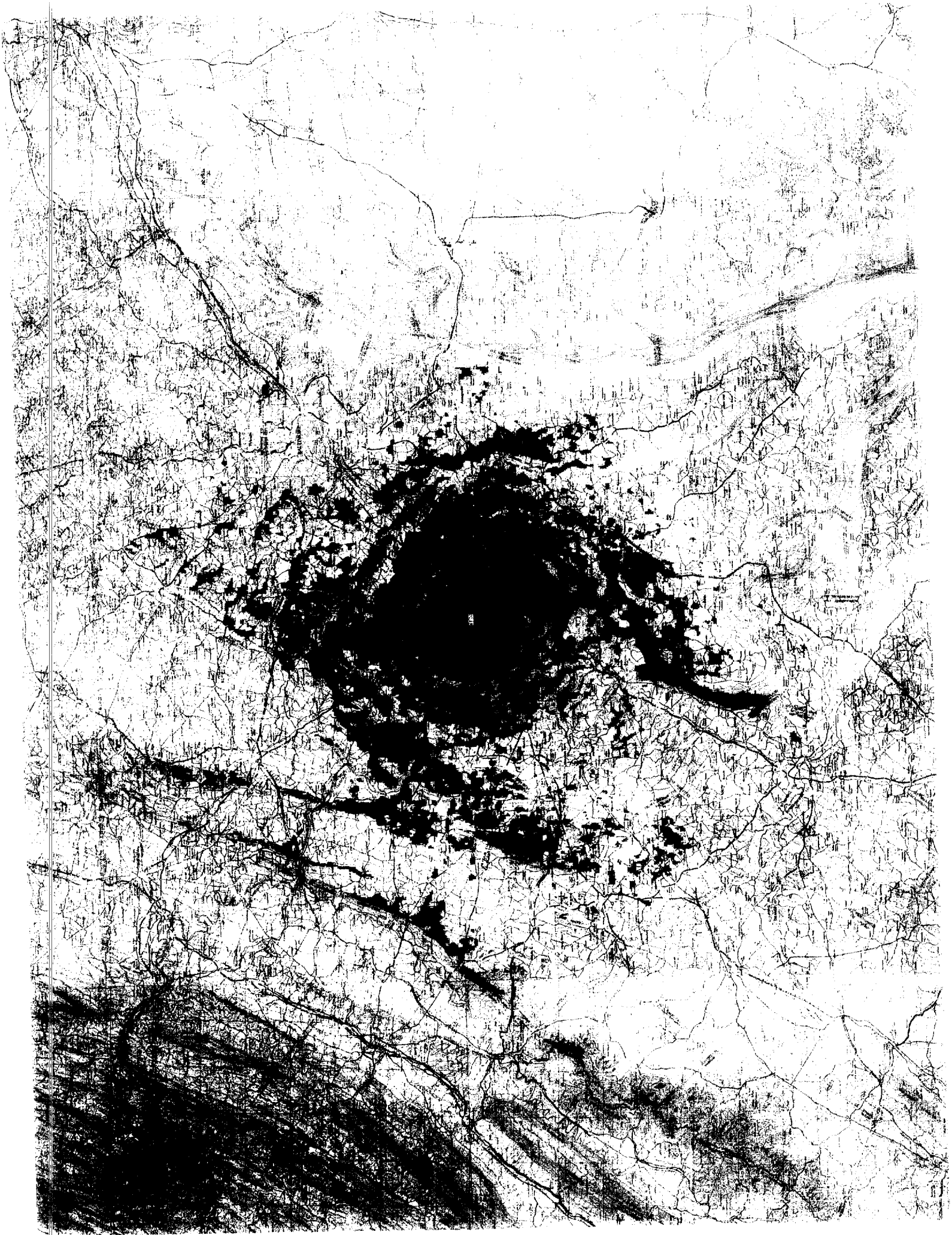

Exhibit E

EXHIBIT E

Declaration of William Hassinger, CBS, Inc., et al. v. PrimeTime 24 Joint Venture, Civil Action No. 96-3650-CIV-NESBITT (S.D. Fla.).

IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF FLORIDA

CBS, INC., et al. Plaintiffs, v. PRIMETIME 24 JOINT VENTURE, Defendant.	Case No. 96-3650-Civ-Nesbitt Magistrate Judge Johnson

DECLARATION OF WILLIAM H. HASSINGER

I, William H. Hassinger, hereby depose and say as follows:

1. The opinions and statements set forth herein are based on: my experience in the development and oversight of engineering policy and rulemaking in television and radio broadcasting for the Federal Communications Commission, including matters involving the Commission's rules regarding field strength contours and measurements; my review of the technical literature and history of the development of the field strength contours; my review of the Satellite Home Viewer Act of 1988, as amended (the "Act" or "SHVA"); and my general training, education, and experience.

2. I hold the degrees of Bachelor of Science with a major in Economics from the University of Wisconsin, Madison, Wisconsin, and Master of Science in Electrical Engineering from the U.S. Naval Postgraduate School, Monterey, California.

3. I was employed as an electronics engineer for nearly 23 years with the Federal Communications Commission. From January 1980 to April 1987 I was the Engineering

Assistant to the Chief of the Mass Media Bureau. From April 1987 until my retirement in September 1995, I was the Assistant Bureau Chief (for Engineering) of the Mass Media Bureau. During my tenure in the Bureau, I was responsible for overseeing the development of engineering policy and rulemaking in television and radio broadcasting. My duties required me to analyze and explain to Commissioners, agency managers, Congressional staff, and members of the Broadcast industry the intent and effect of technical studies, filings, regulations, and statutes. As Assistant Bureau Chief, I was the Mass Media Bureau's expert and chief spokesman on all aspects of the Federal Communications Commission's proceeding on Advanced Television (or HDTV) and, as such, helped formulate and write the proposals and policies in all Advanced Television rulemakings.

4. My opinions and statements set forth herein may be summarized as follows:

- The Federal Communications Commission has no explicit definition of an "over-the-air signal of grade B intensity."
- The field strength values associated with "Grade B" service were not intended to be, and are not, a reliable indicator of television reception at any given household.
- The field strength values associated with "Grade B" service are applicable only in rural, outlying, fringe, and noise-free areas; those values have no significance to areas within the Grade A contour or to urban or suburban areas generally.
- The inclusion in the Act of the phrase, "cannot receive ... *through the use of a conventional outdoor rooftop antenna*," suggests that a household that cannot actually receive an acceptable picture is an "unserved household" under the Act.
- The field strength measurement procedure set forth in section 73.686 of the Commission's rules, and referred to in the Declaration of Jules Cohen in this matter, are inadequate for determining whether a household is an "unserved household" under the Act.

Grade B Intensity Signal

5. The Act provides that an "unserved household" is one that, in pertinent part:

> cannot receive, through the use of a conventional outdoor rooftop receiving antenna, an over-the-air signal of grade B intensity (as defined by the Federal Communications Commission). . . .

17 U.S.C. § 119(d)(10)(A). The Federal Communications Commission has no explicit definition of a "signal of grade B intensity." In section 73.683(a) of its rules, the FCC does set forth required median field strengths (in dBu) associated with the Grade A and Grade B contours for the various VHF and UHF channels. This subsection reads in its entirety as follows:

> In the authorization of TV stations, two field strength contours are considered. These are specified as Grade A and Grade B and indicate the approximate extent of coverage over average terrain in the absence of interference from other television stations. Under actual conditions, the true coverage may vary greatly from these estimates because the terrain over any specific path is expected to be different from the average terrain on which the field strength charts were based. The required field strength, *F* (50,50), in dB above one micro-volt per meter (dBu) for the Grade A and Grade B contours are as follows:

	Grade A (dBu)	Grade B (dBu)
Channels 2-6	68	47
Channels 7-13	71	56
Channels 14-69	74	64

47 C.F.R 73.683(a). As I shall explain below, these dBu values and their associated contours are imprecise statistical concepts that were not intended to, and do not, enable one to make a judgment about the television reception of a viewer in any particular household. Moreover, the existence or non-existence of a median field strength associated with the Grade B contour has nothing to do with the "use of a conventional outdoor rooftop receiving antenna."

History and Purpose of the Grade B Standard

6. In the early 1950s, the Federal Communications Commission was developing a national plan for the allocation of television broadcast channels. As part of that effort the Commission had to adopt basic planning parameters, namely the maximum permissible heights of broadcast transmitting antennas, their maximum permissible radiated powers, and the minimum permissible mileage spacings between stations operating on the same and adjacent channels. Those three parameters, and the amount of allocated radio spectrum, would determine the number of stations which could be accommodated in the television band, the density of stations that could be assigned in any given area, and the general service areas of individual stations.

7. As part of the process of selecting a set of values for these planning parameters, the Commission and its staff, in consultation with industry, developed a model using standardized radio-frequency propagation curves, a set of technical planning factors, and a standard criterion of service. The planning factors were used to calculate the strength of the radio signal (or signals) that was needed to satisfy the standard criterion of service (described in Para. 9). The propagation curves showed how far these signals would extend from a transmitting station over average terrain under various combinations of antenna power and height. If, for example, it was decided that a signal strength of 47 dBu was needed to produce an acceptable picture, then the propagation curves could be used to compare how far that 47 dBu signal would extend from a station using 50 kilowatts of power and an antenna 500 feet above the ground with the coverage of another station using 100 kilowatts of power and a 1000 foot antenna height. This process can be extended to many other combinations of power and

height. Finally, this data, taken in conjunction with demographics, interference criteria, public comments, and other factors, enabled the Commission formally to adopt appropriate values for station separations, powers, and heights, and to develop a nationwide assignment plan, which it did in 1952.

The Standard Criterion of Service

8. As part of its effort to establish what has become the current television broadcast service, the Commission developed the concept of two levels of television service, known as Grade A and Grade B. These levels have been accurately summarized as follows:

> Grade A represents a specific value of ambient median field strength existing 30 feet above ground which is deemed to be sufficiently strong, in the absence of interference from other stations, but with due consideration given to man-made noise typical of urban areas, to provide a picture which the median observer would classify as of "acceptable quality," assuming a receiving installation (antenna, transmission line and receiver) considered to be typical of suburban or not too distant areas. The signal level is sufficiently strong to provide such a picture at least 90 percent of the time at the best 70 percent of receiving locations. The Grade A contour represents the outer geographic limits within which the median field strength equals or exceeds the Grade A value.
>
> Grade B represents a specific value of ambient median field strength existing 30 feet above ground which is deemed to be sufficiently strong, in the absence of man-made noise or interference from other stations, to provide a picture which the median observer would classify as of "acceptable quality," assuming a receiving installation (antenna, transmission line and receiver) considered to be typical of outlying or near fringe areas. The signal level is sufficiently strong to provide such a picture at least 90 percent of the time at the best 50 percent of receiving locations. The Grade B contour represents the outer geographic limits within which the median field strength equals or exceeds the Grade B value.

Robert A. O'Connor, Understanding Television's Grade A and Grade B Service Contours, IEEE Transactions on Broadcasting, Vol. BC-14, No. 4, at 137 (1968)(emphasis added) (attached hereto as Exhibit A).

9. The standard criterion of service is the availability of a desired signal, free of interference, for at least 90% of the time. For both Grade A and B, the desired signal was one thought to provide a picture whose quality was "acceptable" to the median viewer. For Grade A service those conditions must be met for the best 70% of receiving locations. For Grade B service those conditions must be met for the best 50% of receiving locations. The Grade A service area is the area between a broadcast station's transmitter and its Grade A contour. The Grade B service area is the area within the station's Grade B contour but outside its Grade A contour. Under average conditions, the Grade B service area takes the form of a ring or doughnut.

10. Grade A service assumes a typical receiving installation located within a typical urban or suburban area with an appreciable amount of man-made noise present. This man-made noise is electrical noise which may degrade the quality of the picture or sound carried on a television signal. The sources of man-made noise are numerous and include such things as power line transformers, automobile ignition systems, video games, hair dryers, mobile radios, paging systems, electric razors, appliance motors, garage door openers, and fish tank heaters. The noise may be continuous or intermittent. It tends to be more pervasive the closer people live to one another. Grade B service assumes a typical receiving installation appropriate for a rural area with no significant man-made noise present.

11. The planning factors reflect these conceptual differences. See Third Notice of Further Proposed Rule Making, Federal Communications Commission, Docket Nos. 8736, 8975, 9175, 8976 (March 22, 1951). The following table shows the planning factor values for television channels 2 through 6. (There are corresponding values, which are of no immediate concern here, for the other television channels.) The numbers are given in decibels (dB). The totals shown at the bottom of the table are the desired signal strengths associated with the Grade A and Grade B contours in decibels above one microvolt per meter (abbreviated dBu) at

a reference height of 30 feet above the ground. (This particular height is a standard used for comparing measurement data or in making predictions with the Commission's propagation curves. It does not imply that receiving antennas are or should be at this height. Generally, signal intensity at 15 or 20 feet will be appreciably less than at 30 feet.)

PLANNING FACTORS CHANNELS 2-6

FACTORS	GRADE A	GRADE B
1. Thermal Noise	7	7
2. Receiver Noise	12	12
3. Carrier to Noise Ratio	30	30
4. Transmission Line Loss	1	1
5. Dipole Factor	-3	-3
SUBTOTAL	47	47
6. Location Factor (70%)	4	0
7. Time Fading Factor	3	6
SUBTOTAL	54	53
8. Receiving Antenna Gain Factor	0	-6
9. Man-Made Noise Factor	14	0
TOTAL	68 dBu	47 dBu

12. The first three factors determine the amount of signal needed to overcome the electrical noise inherent in a receiver. The fourth factor is an allowance for some loss of signal strength in the line connecting the antenna with the receiver. The fifth (or dipole) factor is obtained from a standard formula which converts or relates the ambient field strength of an electromagnetic signal to the voltage of the transmission line at the output of a reference half-wave dipole antenna. The first subtotal shows that the Commission assumed that a broadcast signal must be at least 47 dBu to produce an "acceptable picture" in a receiver connected to a dipole antenna.

13. The sixth and seventh factors take into account the fact that VHF and UHF signals vary with time and location. At distances associated with Grade B service (for VHF channels) under average conditions, a signal will vary with the season and the time of day approximately plus or minus 8 db (a range of 16 db). (About 90% of the time, the signal will vary within a range of plus or minus 6 db.) As O'Connor notes, "It is a well-known phenomenon that VHF and UHF fields vary with time, diurnally and seasonally, at a given location.... It is an equally well known phenomenon that VHF and UHF fields vary with location at any given distance from the transmitter. By virtue of the relatively short wavelengths involved, it is quite common for the field strength to vary several dB over a relatively short distance of a few yards." O'Connor, *supra* note 3, at 141.

14. The Commission's propagation curves used for predicting the coverage of a broadcast station are based on median values; that is, for any given distance the curves will show the value of field strength expected to be exceeded at the best 50% of receiving locations for 50% of the time. This means that at those locations, the signal will fall below 47 dBu half the time. Since the standard criterion of service for both Grade A and Grade B specifies that the desired signal must be available 90% of the time, the required median field strength must be increased by an appropriate amount.

15. From the Grade B column we see that the Commission decided that a 6 dB increase was needed to compensate for time fading for Grade B service. The second subtotal therefore means that a television signal must have a median field strength of 53 dBu to ensure that the signal exceeds 47 dBu for 90% of the time (at the best 50% of receiving locations). Corresponding adjustments were made to the Grade A specification to define the median signal strength needed to produce an acceptable picture for 90% of the time. The time fading factor for Grade A is smaller (3 dB as opposed to 6 dB) because the Grade A contour is closer to the transmitter than the Grade B contour; at those reduced distances the signal does not vary as

much seasonally or temporally from the median value as it does at the Grade B contour. Additionally, in specifying Grade A service, the Commission added 4 dB to the Grade A column to raise the desired level of service from 50% of locations to 70% of locations.

16. The last two planning factors (receiving antenna gain and man-made noise) account for the major numerical and conceptual differences between the two services. It is assumed that rural viewers in the Grade B service area will employ an antenna with 6 dB of gain (improvement) over the reference antenna (which, by definition, has zero relative gain). This means that a lower signal intensity (47 dBu rather than 53 dBu) will satisfy the standard criterion for service in the Grade B service area. "Grade B Receiving Antenna Gain Factor" is shown as a negative quantity because it reduces the level of signal needed for service. Because antennas with 6 dB of gain tend to be large and unwieldy, particularly at VHF frequencies, we may infer that the Commission assumed that viewers in the Grade B service areas would employ rooftop antennas. In contrast, viewers in the Grade A service area are assumed to have an antenna that is no better or worse than the reference dipole. It is not clear from the planning factors what type of antenna the Commission assumed viewers in the more densely populated Grade A service area would use. However, the choice of zero dB of gain is not consistent with the characteristics of outdoor rooftop antennas. In urban and suburban areas (including the Grade A service area), the presence of man-made noise means the signal intensity must be higher (68 dBu rather than 54 dBu) to overcome interference caused by such noise and thereby to produce a signal that satisfies the standard criterion for service. The planning factors make no adjustment for man-made noise in the Grade B (rural) service area. However, a 1977 review of the technical planning factors, in a document released by the Office of the Chief Engineer of the Commission, stated that:

> Large population shifts, from cities to suburban areas, in many parts of the country, cause the Grade B contours in these areas to no longer lie in "rural"

areas. The assumption of 0 db to overcome rural noise in these "rural areas" is probably no longer valid because of the increased number of high voltage lines and motor vehicle traffic volume.

Research & Standards Division, Office of Chief Engineer, Federal Communications Commission, "A Review of the Technical Planning Factors for VHF Television Service," FCC/OCE RS 77 01, March 1, 1977, page 11 (attached hereto as Exhibit B).

The Field Strength Values Associated with the Grade B Contour or Grade B Service Were Not Intended to be and Are Not a Reliable Indicator of Service at Any Given Household.

17. The field strength values associated with Grade B service are not a reliable indicator of service at any particular household and were never intended by the FCC to indicate such service. Rather, the field strength values associated with Grade A and B contours and service areas were essentially broad planning concepts, useful primarily in estimating the overall reach or coverage of a broadcast signal. It is essential to recognize that the field strength values are median values. Moreover, the contours and associated field strengths assume no interference from other television stations (i.e., co-channel or adjacent channel interference). In practice, however, these phenomena are common. As Rule 73.683(b) points out, "the actual extent of service will usually be less than indicated by these estimates due to interference from other stations." Nor do the field strength values take into account multipath interference, or ghosting, which can significantly impair the quality of a broadcast signal.

18. Multipath interference, which is quite common, arises due to reflections of broadcast signals from buildings, metal objects, hills and even flat ground. These reflections mean that a broadcast signal can follow different paths before arriving at a receiver. For example, one portion of a broadcast signal may travel in a straight line from the transmitter to

a receiver. Another portion of the signal may be reflected by an overflying aircraft and arrive at that same receiver from a different direction delayed in time because of the longer path. Multiple delayed signals can give rise to ghosting: that is, the appearance of second ghost-like images on a television screen. A viewer may also receive two different pictures simultaneously from two different stations operating on the same television channel. The screen may show multiple distorted images. In that case, even if the preferred signal is above 47 dBu, the viewer is not getting an acceptable picture.

19. Because of their limited utility, the Commission's rules expressly provide that the field strength contours will be considered for the following purposes only:

> (1) In the estimation of coverage resulting from the selection of a particular transmitter site by an applicant for a TV station.
>
> (2) In connection with problems of coverage arising out of application of [multiple ownership rules].
>
> (3) In determining compliance with § 73.685(a) concerning the minimum signal field strength to be provided over the principal community to be served.

47 C.F.R. § 73.683(c).

The Inclusion of the Phrase, "Cannot Receive ... *Through the Use of a Conventional Outdoor Rooftop Antenna*," Suggests that a Household that Cannot Actually Receive an Acceptable Picture is Unserved Under the Act.

20. As noted above, the required field strength for a Grade B contour, set forth in Rule 73.683(a) represents a specific value of ambient median field strength existing 30 feet above the ground produced by a broadcast transmitter. Its existence has nothing to do with the presence or absence of a conventional rooftop antenna. The inclusion of the concept of a conventional rooftop antenna suggests that a household be able to receive an acceptable picture and not merely be situated in or near an electromagnetic field of a given strength. If the test

for service is merely the presence or absence of a signal of a certain intensity at, above, or in the general vicinity of a household, then the reference to a conventional rooftop antenna serves no purpose. The inclusion of this reference to a conventional rooftop antenna by Congress strongly suggests that the statute intended that an evaluation of service must do more than simply examine the ambient median field strength. Such measurement does not account for multipath interference, adjacent or co-channel interference, noise, diurnal or seasonal variations or other factors. One must correlate the technical data with the evidence that the signal measured is or is not usable and reliable before drawing a conclusion.

21. Beyond the ambiguity inherent in the term "signal of grade B intensity," the Act's eligibility standard gives rise to several additional uncertainties. For example, the qualifier "conventional" gives no definite indication of what sort of receive antenna Congress had in mind. Performance of home antennas varies across a wide range, with a major impact on the strength and quality of signals a household can receive. Additionally, performance of these antennas need not correlate with their price. As a second example, antenna orientation has a great impact on reception of a signal, yet the Act does not prescribe how they should be oriented for eligibility purposes. Householders might make a reasonable decision to orient the antenna in order to "compromise" reception of two or more stations with transmitters situated in different locations. Such a compromise would diminish the reception of each signal in question, yet the Act offers no guidance regarding treatment of this type of tradeoff.

The Field Strength Values Associated with "Grade B" Service are Applicable, if at all, Only in Rural, Outlying, or Fringe Areas and Have No Relevance to Areas Within the Grade A Contour.

22. In instances when it is found useful to employ Grade A and B service concepts, it should be kept in mind that the distinction between the two service areas is appreciable. A median signal of, for example, 52 dBu might provide an acceptable picture in a Grade B

(rural) service area. That same field strength is unacceptably low in a Grade A (urban/suburban) service area or in urban or suburban areas within the Grade B contour which contain significant man-made noise. To the extent that the field strength values associated with the Grade B contour are relevant to eligibility under the Act, such values can have no applicability within Grade A service areas or other areas with significant man-made noise. In light of this factor and the other factors noted above, a measured ambient field strength of 47, 56, or 64 dBU (for channels 2-6, 7-13, and 14-69 respectively) is insufficient to provide an acceptable quality picture to the typical urban or suburban household.

The Field Strength Measurement Procedure Set Forth in the Commission's Rules and the Procedure Used by Cohen are Inadequate for a Determination of Service Under the Act.

23. The Act does not provide any guidelines for how to measure its eligibility standard and does not point to any authority on how to conduct such a measurement. To my knowledge, the FCC has not been asked to develop any such guidelines.

24. The FCC, in section 73.686 of its rules and regulations, calls for measurements either along radials drawn from a station's transmitting location, or at intersections of a grid drawn over the relevant community. Measurements are to be taken over a horizontal run of 100 feet, if feasible, or in clusters, with the measurement antenna elevated 30 feet above the ground. This methodology is designed to produce unbiased data indicative of a station's signal coverage over broad areas.

25. In my opinion, the established TV field strength measurement procedures in FCC Rule 73.686 were not intended to evaluate the particular television reception of any given household. In its licensing process the Commission examines a broadcast station application to determine if the station's predicted city grade contour (equal to Grade A value plus 6 dBu) will cover its community of license, and if the proposed facilities comply with regulations on

power, height, and spacing. It is taken for granted that the actual coverage will depart from predicted service to a greater or lesser degree, that some households outside the predicted service areas will receive acceptable pictures, that some households inside predicted service areas will not receive acceptable picture and the quality of service will vary throughout the service areas.

26. In considering applications for licenses and permits, questions will occasionally arise as to whether a station's coverage in a particular area is significantly better or worse than predicted. For example, if a station proposes to move its transmitter to a new location, opponents may argue that the move may deprive an area, perhaps a small community, of its only network television service. In turn, the station may argue that local conditions are such that its actual coverage is better than predicted and that the small community will retain its service in spite of the transmitter move. The parties may then resort to actual field strength measurements to resolve the issue. The accepted measurement procedures are defined to produce sufficient unbiased data that will allow the Commission confidently to decide whether a given area does or does not receive the disputed service. To my knowledge, the Commission has never examined the question of whether a particular household does or does not receive television service, has never approved a procedure for making such a determination and would have no use for such information.

27. I have reviewed the Declaration of Jules Cohen in this matter in which he describes certain measurements that were conducted following the procedure "prescribed by the FCC in 47 C.F.R. § 73.686," and which were made with a "conventional rooftop antenna elevated to 30 feet." The type of television antenna used to make the measurements is irrelevant to determining ambient field strength insofar as a correction factor is used to account for the particular characteristics of the antenna employed. The procedures set forth in 47 C.F.R. § 73.686 and purportedly used by Cohen are particularly inapt, even to measure the

median field strength present at the household's antenna because, as noted above, signal strength can vary significantly over a very short distance, the measurements are conducted with an antenna which may not be oriented in the same direction as the household's antenna, and the measurements are conducted at 30 feet (rather than the actual height of the subscriber's rooftop antenna).

28. Moreover, it is important to recognize that, as described above, the values for the Grade A and B contours are median values and represent the average of many values over a long period of time. Measurements of the signal intensity along a 100-foot path 30 feet above the ground, cluster measurement taken at and around a point 30 feet above the ground, or measurements made at some alternative height, are all essentially one-time samples. They are indicative of the characteristics of the signal available in the immediate area of the measurement at the time taken and, when combined with other samples, indicative of the general service provided by the station. However, the one-time measurement of a signal in the vicinity of a household, as contemplated by the Cohen methodology, does not permit one to determine what the actual median field strength is at a location, which requires repeated measurements over a long period of time. Moreover, such measurements do not permit one to determine that a nearby household will receive an acceptable picture 90% of the time using a conventional outdoor rooftop antenna. Measurements must be validated by actual observation of the television picture received at the household. Single, one-time, unvalidated measurements are inconclusive.

29. I have been told that PrimeTime 24 has not received the backup data for the measurements referred to in the Declaration of Jules Cohen nor the data and computer program specifying the methodology used in creating the so-called "Longley Rice" maps. Without such materials, one cannot meaningfully evaluate the tests or the maps.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

William H. Hassinger

Dated: April 25, 1997